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JOINT FIRES COORDINATION: SERVICE SPECIALTIES AND BOUNDARY CHALLENGES

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy

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15.Abstract: Among the challenges facing joint force commanders today is the coordination of operational and tactical fires which traverse boundaries within a joint operations area. These boundaries are the demarcation of deep and close battlespaces within individual areas of operations that are normally controlled by different supported commanders. Adequate coordination among supported commanders is pivotal to avoid fratricide and reduce duplication of effort. Unfortunately, joint doctrine does not adequately address how commanders can ensure economy of force and unity of effort when conducting joint fires. Specifically, the challenge is most critical in the area between the Fire Support Coordination Line (FSCL) and the Joint Force Land Component Commander's (JFLCC) forward boundary because joint fires must complement future operational maneuvers.

This paper evaluates the issue of joint fires coordination by examining joint and service doctrine publications, combatant command directives, and the Joint Universal Lessons Learned (JULLs) database. Interviews were also conducted to gain a deeper understanding of the problem. In short, there is no common understanding among services about joint fires coordination, operational and tactical fires, and deep battlespace missions.

This challenge can be resolved by modifying joint doctrine to address adequately joint fires that traverse intra-theater boundaries. Recommendations include creating a coordination element within each supported commander's staff and providing the JFLCC an adequate maneuvering area beyond the FSCL to independently conduct deep operational maneuvers.

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Among the challenges facing joint force commanders today is the coordination of operational and tactical fires which traverse boundaries within a joint operations area. These boundaries are the demarcation of deep and close battlespaces within individual areas of operations that are normally controlled by different supported commanders. Adequate coordination among supported commanders is pivotal to avoid fratricide and reduce duplication of effort. Unfortunately, joint doctrine does not adequately address how commanders can ensure economy of force and unity of effort when conducting joint fires. Specifically, the challenge is most critical in the area between the Fire Support Coordination Line (FSCL) and the Joint Force Land Component Commander's (JFLCC) forward boundary because joint fires must complement future operational maneuvers.

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JOINT FIRES COORDINATION: SERVICE SPECIALTIES AND BOUNDARY CHALLENGES

Introduction[1]

Intra-theater boundary relationships between close and deep battlespaces in a typical theater of operations vary between combatant commands. The junction where deep and close battlespaces meet requires careful consideration by planning staffs because within this juncture lies challenges for operational commanders conducting tactical and operational fires and maneuvers, and joint fire support.[2] One of the challenges resides under an umbrella called "joint fires" where cross-boundary coordination is critical for synchronized actions which allow for economy of force, unity of effort, and integrated joint operations. Currently, joint doctrine does not adequately address intra-theater, cross-boundary joint fires coordination. In general, the solution rests in modifying joint doctrine. This thesis will be discussed by examining joint publications, Joint Universal Lessons Learned (JULL) archives, the Combined Forces Command and other combatant command boundary relationships, and other sources. The problem is significant because it transcends the services and supports their parochial interests. More importantly, human lives on the battlefield depend upon adequate joint fires coordination. The paper will begin by looking at the differences between terms and battlespace perspectives among the services, the implication of this problem to air and land commanders will be discussed, and then conclusions and possible solutions will be offered.

Toward A Common Understanding

Different services use different terms to describe joint fires, and close and deep battlespaces. Draft Joint Pub 3-09 describes "joint fires" as lethal or nonlethal weapon effects that achieve strategic, operational, or tactical actions supporting major operation or campaign objectives.[3] This term implies that more than one service is affected by these fires. The U.S. Army (USA) discusses joint fires in terms of operational and tactical fires. In short, operational fires are lethal and nonlethal weapon effects that influence enemy

operational forces, critical functions, and key facilities to accomplish operational objectives in support of a major operation or campaign. For example, an Advanced Tactical Missile System (ATACMS) fire at an enemy surface-to-surface launcher could be an operational fire. On the other hand, tactical fires are lethal or nonlethal weapon effects that accomplish tactical objectives in direct support of a major operation.[4] For example, an ATACMS or Multiple Launch Rocket System fire at an enemy heavy artillery position provides direct support and accomplishes tactical objectives.

Close and Deep Operations. The U.S. Air Force (USAF) discusses operational fires as "deep operations," or those operational fires beyond the Fire Support Coordination Line (FSCL) including air interdiction, strategic attack, suppression of enemy air defenses, and offensive counter air missions. Tactical fires also include close air support for ground forces in the close battlespace before the FSCL.[5]

Joint fires can be either operational or tactical fires. They also can be attacks on close or deep targets with direct fire, direct support, or deep supporting fire. The key distinction between operational and tactical fires lies in the "purpose" of joint fires: operational fires are designed to accomplish operational objectives and tactical fires are designed to accomplish tactical objectives.[6] Unfortunately, even consensus about the importance of "purpose" in operational fires is lacking. For example, some publications state that the key distinction between operational and tactical fires is the "outcome"--operational fires having a decisive impact on the outcome of a major operation or campaign.[7] As shown in Figure 1, joint fires beyond the FSCL occur in deep battlespace and before the FSCL occur in close battlespace.

GENERIC JOINT OPERATIONS AREA: MISSIONS AND BATTLESPACES

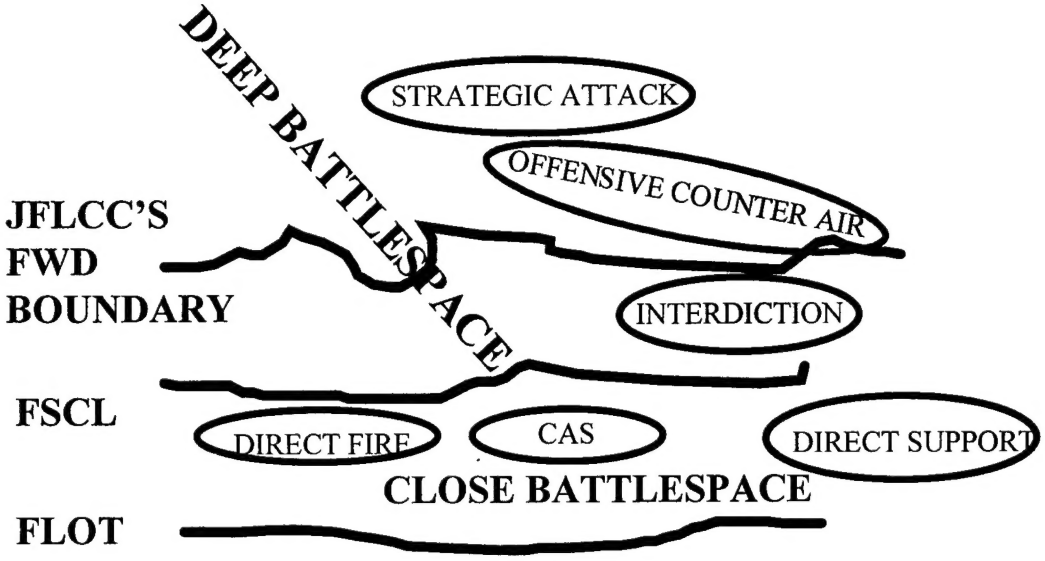

Figure 1

This description of a generic joint operations area (JOA) graphically shows the boundaries and some typical missions in this area. However, what are deep and close operations? The USAF, U.S. Navy (USN), and U.S. Marine Corps do not discuss this concept in their doctrinal publications.[8] The USA is the only service that comprehensively develops the concept of close and deep operations. Its doctrine says that close operations are when forces are "in immediate contact" and include the corps and division current battles.[9] Close battlespace is considered that battle area before the FSCL. Deep operations, on the other hand, may help defeat the enemy outright and are activities against an enemy's forces and functions beyond the close battle.[10] Deep battlespace is considered that battle area beyond the FSCL.

Even within individual services there are inconsistencies in discussing these terms. For example, Air Force Manual 1-1 does not include a discussion of close and deep operations. However, in 1994, the Chief of Staff of the Air Force (CSAF) presented a speech segmenting the battlefield into close and deep battles--as the USA describes comprehensively. In his presentation, the CSAF, however, added the "high battle" as another battlespace area in an effort to identify a mission niche to the commission studying DoD's roles and missions.[11]

In sum, inconsistent service descriptions of joint fires and battlespaces make serious inter-service discussions about joint fires coordination difficult. Cross-boundary operations involving operational fires in depth and tactical fires in the close fight are important issues for military planners. Joint fire support with synchronized actions can provide greater economy of force and unity of effort.[12] Unfortunately, terminology differences are not the only distinction among services. New weapon systems which can rapidly attack deep targets permeate the battlefield. Moreover, methods to establish intra-theater boundaries are missing from joint doctrine. The next two subsections will discuss briefly service specialties in attacking deep targets and boundary challenges.

Service Specialties. Each service have weapon systems that can traverse intra-theater boundaries. All services can attack close and deep targets; therefore, command, control, and coordination become important operational design requirements. For example, the USA has ATACMS and Apache helicopters; the US Marines have the F/A-18, AV-8, and EA-6B aircraft; US Special Operations Forces (SOF) have Direct Action and Special Reconnaissance teams; the USN and USAF have strike aircraft, cruise missiles, and Unmanned Aerial Vehicles. Individual service weapon systems can be used to conduct close air support, strategic attack, and interdiction missions, as well as others, that affect deep battlespace.

Because of the services' increasing capability to attack deep targets. the need is growing for joint fire support and greater coordination for joint fires between close and deep battles. The CSAF advocated that the

Joint Force Land Component Commander (JFLCC) control all assets influencing the close battlespace, such as the A-10, and that the Joint Force Air Component Commander (JFACC) control all assets influencing the deep battlespace, such as the ATACMS.[13] Unfortunately, this approach to fortifying the air and land commanders' boundaries does not solve the inevitable requirement for synchronized cross-boundary actions during the reality of war.[14]

The Boundaries. The boundaries that separate deep and close battlespaces are normally well established within a theater of operations, but are not grounded clearly in joint doctrine. Joint fires which cross intra-theater boundaries require careful deconfliction to prevent fratricide and avoid duplication of effort, while supporting operational momentum, maintaining the initiative, and conducting maneuvers. These boundaries are discussed next.

The method that a Joint Force Commander (JFC) uses to segment the JOA varies among commanders. Joint Pubs 0-2, 3-0 and 5-00.2 all provide guidance. For example, Joint Pub 0-2 discusses supported commander responsibilities and Joint Pub 3-0 discusses establishing supported and supporting relationships between components.[15] In a Major Regional Contingency (MRC), like Korea, the Commander-in-Chief, Combined Forces Command (CINC/CFC) established the boundaries, areas of operations (AO) and command relationships between subordinate commanders (see Figure 2 below).

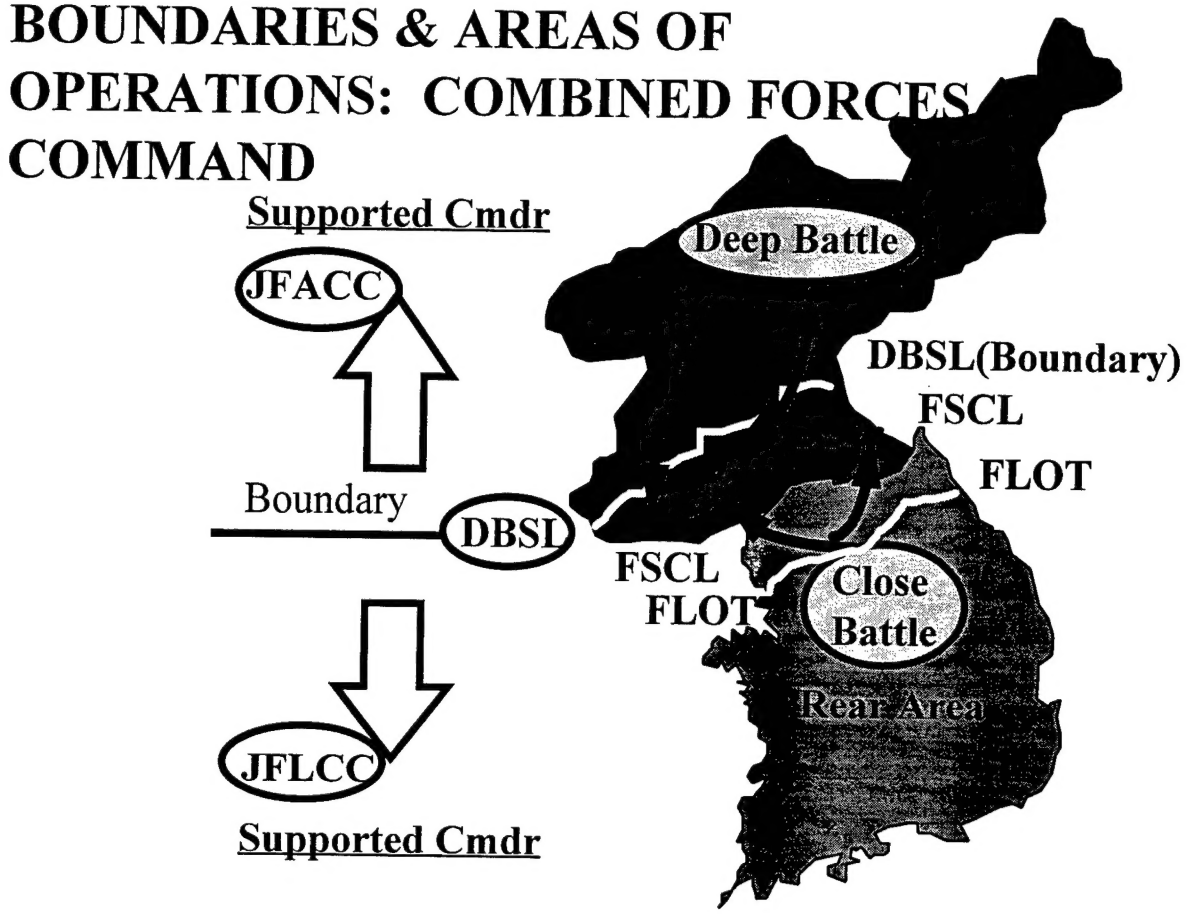

Figure 2[16]

Close battlespace represents the area between the forward line of troops (FLOT) and the FSCL. As previously shown in Figure 1, within this area joint fires consist of close air support, counter air, direct support missions, and more. The supported commander is the JFLCC whose forward boundary extends well beyond the FSCL.[17] In Korea, this forward boundary is called the Deep Battle Synchronization Line (DBSL).[18] This boundary is important because the airspace beyond it is controlled tightly to sequence air assets conducting simultaneous missions in the JFACC's deep battlespace. However, establishing this boundary conflicts with the JFLCC's independent ability and need to shape operational depth. The JFACC is the supported commander for deep operations beyond the JFLCC's forward boundary.[19] Within this AO, joint fires consist

of air and surface interdiction missions that affect operational maneuvers of the JFLCC, as well as support for SOF, strategic attack, counter air, and direct support missions.

A Problem for Supported Commanders

The cross-boundary joint fires coordination problem is particularly acute in the area between the FSCL and the JFLCC's forward boundary because both supported commanders in the close and deep battles have important, time-sensitive missions in this area. Overlapping actions in this area must be synchronized because of their interdependencies. However, joint doctrine provides little guidance on how to synchronize them. Additionally, the boundary problem is exacerbated during rapidly mobile battles where the FSCL and the JFLCC's forward boundary are moving quickly. As the battle becomes more mobile, the distance between the FLOT and the FSCL increases which increases the demand for close air support (CAS) missions. Moreover, controlling CAS in a rapidly moving battle is very difficult (see Figure 3 below).

MOBILE BATTLES

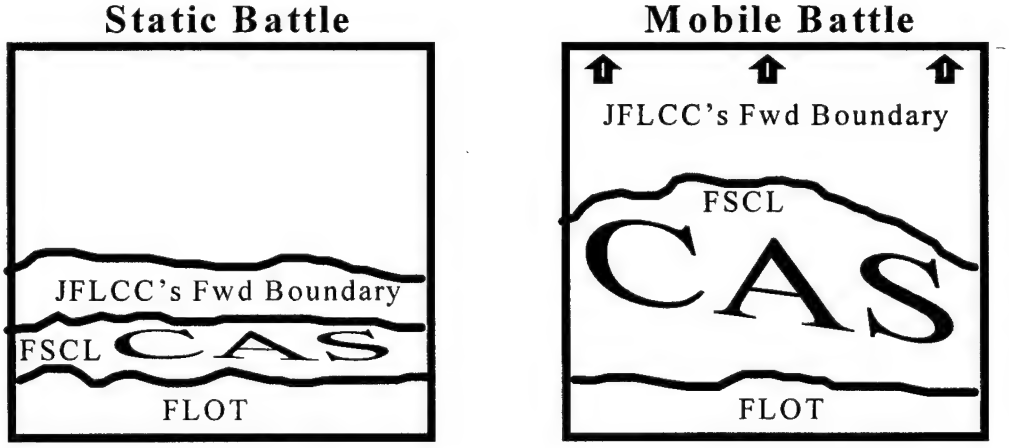

Figure 3

Furthermore, interdiction beyond the FSCL, but before the JFLCC's forward boundary must be pre-planned to complement operational maneuvers, disrupt the flow of troops and equipment moving towards the close battle,[20] and control the airspace. Currently, the JFACC is normally the supported commander for interdiction missions; however, interdiction missions are most critical just beyond the FSCL where the JFLCC is normally the supported commander. This battlespace area is not within the JFACC's boundary. Unfortunately, joint doctrine provides little guidance on how to ensure economy of force and unity of effort in this important battlespace.

What Joint Doctrine Says. Joint Pub 3-0 briefly discusses control and coordinating measures. It states that FSCLs are permissive fire support coordinating measures (FSCM) which are established and adjusted by the JFLCC.[21] Additionally, in a brief discussion about attacking targets beyond an FSCL, joint doctrine states that commanders conducting joint fires beyond the FSCL must "inform" all affected commanders to avoid fratricide.[22] Draft joint doctrine specifically addressing joint fire support beyond the FSCL states that coordinating attacks beyond the FSCL are "especially critical" to "avoid conflicting or redundant attack operations."[23]

Because an FSCL is a permissive FSCM, joint fires beyond this point allow for rapid attacks of targets of opportunity which are within the Air Tasking Order (ATO) planning cycle. Major operations and command relationships must be flexible enough to capitalize on each supported commander's ever increasing capability to attack time sensitive targets beyond the FSCL. Additionally, the FSCL is not a boundary. The synchronization of actions on both sides of it is normally the responsibility of the JFLCC out to the forward boundary. Furthermore, draft Joint Pub 3-09 says that in "exceptional circumstances" commanders unable to coordinate activities are not precluded from attacking targets beyond the FSCL. However, "failure to do so may increase the risk of fratricide or waste limited resources."[24] The point is that

if ground forces attack (or can attack) targets without coordinating with the JFACC, then synchronizing actions, coordinating targeting, and ultimately achieving objectives are jeopardized.

The Marine Air-Ground Task Force (MAGTF) is Protected. Joint doctrine provides little guidance on how to handle the cross-boundary problem and, in some cases, actually provides protected status to some services. For example, Joint Pub 0-2: Unified Action Armed Forces (UNAAF) affords the MAGTF "protected status" from supported commanders hoping to use MAGTF air assets.[25] During an amphibious operation, the integrated use of Marine air with Marine ground forces is mandated because of the critical vulnerability of an amphibious objective area (AOA). However, once the amphibious operation is completed and the AOA is disestablished, then synchronized joint fires in the deep battle become problematic. For example, the UNAAF states that MAGTF excess sorties will be provided to the JFC. However, sorties for counter air, "long-range" interdiction, and reconnaissance are not "excess" sorties. Rather, the UNAAF explicitly states that these sorties are not considered excess because they "provide a distinct contribution to the overall joint force effort."[26]

Once an AOA is disestablished and a MAGTF uses organic air to shape its deep operational maneuvers, then joint fires among services become nearly impossible to synchronize. Deconflicting offensive counter air, strategic attack and interdiction missions become top priority to prevent fratricide. The problem is that concerns for joint service deconfliction override concerns for synchronized actions when clearly there is an opportunity for joint fires coordination which provides greater economy of force and unity of effort. A simple solution to deconflict forces has been to provide the MAGTF with its own boundary (AO) which protrudes well beyond the FSCL and JFLCC's forward boundary.[27] This simple solution allows the MAGTF freedom of maneuver, but at a loss of joint fires coordination and support, economy of force, and unity of effort. This separate organization fragments the JFC's command and control because integrated MAGTF operations, even as part of an MRC, are protected.

Significance of the Problem. The complexity of this problem may be indicated by the controversy associated with draft Joint Pub 3-09. This publication has been in coordination since 1994 with the services failing to ratifying it, recommending that it be re-written. At the time of this writing, Joint Pub 3-09 is still in coordination in an effort to resolve the controversy involving joint fires. This lengthy coordination and approval period indicates the complexity of joint fires and the conflict among services.

Another indicator of the complexity and significance of this issue to the services is displayed in the JULLs database.[28] Cross-boundary joint fire issues were identified by USCINCPAC, USCENTCOM, USACOM, and CINC/CFC during exercises and real world operations. For example, a Marine unit in Exercise Unified Endeavor 95 highlighted the need to integrate joint fire support in an efficient and effective method to support joint forces.[29] Additionally, in Exercise Cobra Gold 94, the boundary between the MAGTF air wing and JFACC assets, and the utilization of joint service assets in a unified way to reach the JFC's objectives, caused major problems for the planning staffs.[30] Furthermore, in Exercise Ulchi Focus Lens 94, the difficulty in coordinating joint fires beyond the FSCL caused ATO production problems for the JFACC and increased fratricide potential.[31] Finally, the 82nd Airborne Division identified FSCL placement problems during Exercise Gallant Eagle 88. In short, maneuvering airspace for organic army aviation assets was too small to provide adequate close air support to ground units because of the confined space between the FLOT and FSCL, and FSCL changes were not coordinated with other component commanders.[32]

The Combined Forces Command Solution. In Korea, CINC/CFC addressed this problem by appointing the JFACC as the "coordinating authority" for operational fires between the FSCL and DBSL.[33] Additionally, CINC/CFC said that during combat, the JFLCC can still attack time sensitive targets between the FSCL and forward boundary--even without "informing" the JFACC. However, "such attacks should be the exception rather than the rule."[34]

At least in the Korean theater, CINC/CFC's effort to resolve the problem has not been totally successful. For example, significant synchronization problems were noted during major JCS-sponsored joint and combined command and control exercises (Ulchi Focus Lens 1995 & 1996) involving direct support missions beyond the FSCL. However, incorporating direct fire beyond the FSCL was relatively easy to coordinate between supported commanders because of short times of flight for direct fire assets.[35]

Desert Storm. Some critics may argue that exercises and simulations are not suitable test cases to claim that a cross-boundary problem is significant--possibly claiming that exercises are not robust enough or that operational leadership will resolve this "real war" challenge.[36] One need only look at the Operation Desert Storm JULLs to see this is not true. During this real war experience, USA and MAGTF units applied different rules for cross-boundary fires. The USA felt that it could provide both direct and indirect fires into deep battlespace; however, the MAGTF treated the FSCL as a boundary which required authority to fire beyond it.[37] The Joint Staff's recommendation to solve this problem was to re-define the term "boundary." The new definition in Joint Pub 1-02 describes a boundary as a line delineating "areas" to allow for coordination and deconfliction between "units, formations, or areas."[38] Unfortunately, this new definition does not solve the problem associated with joint fires coordination across intra-theater boundaries.

Implications of this Challenge

This topic is controversial because it transcends the joint services and involves issues at the core of each service's functional specialties. With ever-increasing weapon capabilities to simultaneously and precisely attack targets throughout close and deep battlespaces, coupled with a trend toward near-real time information available to attack critical targets, the cross-boundary problem is acute now.[39] In the near future, it may become an overwhelming problem for operational commanders unless joint doctrine is crafted to address adequately the issue. Additionally, the issue will affect many JFCs executing their war plans.

However, the problem is beyond the sight of many commanders in less developed theaters. In lesser regional contingencies (LRCs), establishing appropriate missions and tasks, tailoring forces, and organizing command structures may be overriding goals during planning phases. This operational challenge has immediate and future importance to joint operations.

Despite the lack of attention in joint publications, the area between the FSCL and JFLCC's forward boundary is critical for synchronizing actions among joint forces, achieving economy of force, and establishing an optimal time, space, force relationship.[40] The synchronization of actions beyond the FSCL must occur to maintain operational momentum and to have integrated operational maneuvers focused on the JFC's objectives. For example, interdiction missions should focus on enemy troops and equipment that affect operational maneuvers. An interdiction effort that is not closely connected with operational maneuvers is irrelevant to ground commanders--possibly having an adverse effect on offensive operations and operational momentum. When the JFLCC has an immediate need to attack a high priority target beyond the FSCL with direct fire or deep supporting fire, joint fire support can reduce the vulnerability of some assets. The JFACC can re-prioritize or divert counter air or other deep battle missions to provide joint fire support. In Korea, the synchronization of actions in the area between the FSCL and forward boundary is conducted by two working groups: the JFLCC's Deep Operations Coordination Cell and the JFACC's Synchronization Cell.[41] These two working groups ensure that operational maneuvers are complemented with deep battlespace missions.[42]

Additionally, synchronizing JFACC and MAGTF actions can provide greater economy of force as interdiction, counter air, and close air support missions among the services become complementary (rather than deconflicted) and support the JFC's campaign objectives with a unified effort. Isolating a MAGTF in its own AO after disestablishing an AOA allows it unity of command and independent operations; however, joint fire support and coordination problems are intensified while unity of effort is degraded.

Finally, the optimal relationship among space, time and forces fits neatly with operational designs that emphasize the synchronization of joint actions around the FSCL.[43] For example, as shown in Figure 3, during rapidly moving battles, the FSCL placement becomes farther away from the FLOT. This increased space requires more forces to provide close air support before the FSCL and interdiction beyond the FSCL. In short, rapidly moving battles attempt to minimize time and capture objectives quickly at the cost of requiring greater space and more forces. The synchronization of joint fires is critical for greater unity of effort, economy of force, and achievement of objectives.[44]

Conclusion

Joint fires coordination among supported commanders is a complex issue with significant battlespace implications. Individual service specialties, including weapon systems and doctrine, as well as the cross-boundary challenge to achieve economy of force and unity of effort, must be addressed when campaign planning. The solution to this challenge rests in the heart of operational synchronization which, according to Joint Pub 3-0, is the essence of campaign planning and execution. Significant problems affecting both supporting and supported commanders have been discussed. Currently, the solution often lies in flexible and innovative operational leadership. Joint doctrine should be expanded to grapple with this pivotal battlespace challenge because policy makers depend on the Department of Defense to effectively execute the military means of reaching policy ends. With downsizing budgets and the potential re-alignment of service roles and missions, solving this problem will help JFCs execute their campaigns and major operations in today's post-Cold War environment.

Recommendations. Intra-theater, cross-boundary coordination is important to JFCs to accomplish objectives with the greatest unity of effort and economy of force. Synchronized joint fires in the deep battlespace contribute to a soundly executed campaign plan. Therefore, joint doctrine should be modified to

resolve this challenge. Possible solutions range from organizational structural changes to increased command and control. Possible solutions include:

1. Provide JFLCCs enough maneuvering area beyond the FSCL to independently shape the deep battlespace--allowing for unity of command and centralized control.
2. Synchronize air interdiction missions with ground operational maneuvers.
3. Create liaison elements within both JFLCC and JFACC staffs to focus on close and deep battlespace maneuvers--communication between supported commanders is key.
4. Appoint the JFACC as the coordination authority for operational fires beyond the FSCL to ensure unity of effort, and avoid duplication and fratricide.
5. Minimize uncoordinated cross-boundary joint fires--limit them to time sensitive and emerging critical targets.
6. Cost effective joint fires should be valued--cross-boundary joint fires should not occur as a matter of convenience.
7. Keep egos out of the solution--human lives are at stake.

Most importantly, commanders, staffs and fighting units must all keep focused on the objectives and find the best options to achieve them. Solutions based on service biases or other agendas only complicate a JFC's mission.

NOTES

[1]The author is grateful to David A. Dellavolpe, Gerald F. Dillon, and Milan N. Vego for their constructive comments on earlier drafts of this paper.

[2] See, Mark A. Skattum, "Deep Battle: Who's In Charge?" (Carlisle Barracks, PA: U.S. Army War College, 1996); Mark J. Eshelman, "Air Commander Control of Army Deep Fire Assets." (Fort Leavenworth, KS: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1993); Edward J. Francis, "Is Current Fire Support Doctrine for the Deep Battle Effective in the Post Desert Storm Environment?" (Fort Leavenworth, KS: U.S. Army Command and General Staff College, 1993); Robert D. Grymes, "Air Support for the Division Deep Battle: Doctrinal Disconnect." (Fort Leavenworth, KS: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1995); Lester C. Jauron, "The Fire Support Coordination Line: Should it Delineate Area Responsibilities Between Air and Ground Commanders?" (Fort Leavenworth, KS: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1993); Stephen R. Lanza, "Permissive or Restrictive: Is There a Need for a Paradigm Shift in the Operational Use of the Fire Support Coordination Line?" (Fort Leavenworth, KS: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1994); Michael J. McMahon, "The Fire Support Coordination Line." (Fort Leavenworth, KS: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1995).

[3] U.S. Joint Staff, Joint Pub 3-09: Doctrine for Joint Fire Support, proposed final coordinating draft (Washington D.C.: Government Printing Office: 18 April 1996), I-1.

[4] U.S. Department of the Army, FM 100-7, Decisive Force: The Army in Theater Operations (Washington, D.C.: Headquarters Department of the Army), 5-3.

[5] U.S. Department of the Air Force, Air Force Manual 1-1: Basic Aerospace Doctrine of the United States Air Force, Volumes 1 and 2. (Washington, D.C.: Department of the Air Force: 1992).

[6] Milan Vego, "Operational Functions" (U.S. Naval War College: Joint Military Operations Department, August 1996), 24-29.

[7] Joint Military Operations Department, "Glossary of Operational Terms," (U.S. Naval War College: Joint Military Operations Department, August 1996), 20; FM 100-7, 5-3.

[8] Air Force Manual 1-1; U.S. Department of the Navy, Naval Doctrine Publication 1: Naval Warfare. (Washington, D.C.: Headquarters Department of the Navy, 28 March 1994); U.S. Department of the Navy, Naval Doctrine Publication 5: Naval Planning. (Washington, D.C.: Headquarters Department of the Navy, 15 January 1996); U.S. Department of the Navy, NWP 3-56.1TP: Joint Force Air Component Commander Organization and Processes. (Washington, D.C.: Headquarters Department of the Navy, 1 December 1995); U.S. Marine Corps, FMFM 1: Warfighting (Washington, D.C.: Headquarters U.S. Marine Corps, 6 March 1989); U.S. Marine Corps, FMFM 1-1: Campaigning (Washington, D.C.: Headquarters U.S. Marine Corps, 25 January 1989).

[9] U.S. Department of the Army, FM 100-5: Operations (Washington, D.C.: Headquarters Department of the Army: 14 June 1993), 6-4.

[10] FM 100-5, 6-4/5.

[11] U.S. General Accounting Office, Bottom-up Review: Report to Congressional Committee, GAO/NSIAD-95-96. (Washington, D.C.: Government Printing Office, 1995); Merrill A. McPeak, "Roles and Missions of the United States Air Force: The Allocation of Responsibilities," Vital Speeches, Number 60, 1994, 684; Office of the Assistant Secretary of Defense (Public Affairs), "Commission on Roles and Missions of the Armed Forces," (News Release Number 970-95).

[12] Milan Vego, "Operational Synchronization" (U.S. Naval War College: Joint Military Operations Department, September 1996).

[13] McPeak, 1994.

[14] Carl Von Clausewitz, On War, Michael Howard and Peter Paret, eds. and trans. (Princeton University Press: Princeton, NJ: 1984), 78.

[15] U.S. Joint Staff, Joint Pub 3-0: Doctrine for Joint Operations, (Washington, D.C.: Government Printing Office: 1 February 1995), II-9.

[16] Combined Forces Command, Deep Operations Primer - Korea, (n.p., 27 February 1995).

[17] A supported commander is "the commander having primary responsibility for all aspects of a task assigned by the Joint Strategic Capabilities Plan or other joint operation planning authority" U.S. Joint Staff, Joint Pub 1-02: Department of Defense Dictionary of Military and Associated Terms, (Washington, D.C.: Government Printing Office: 23 March 1994), 402. This commander relationship should be compared with the supporting commander who is "a commander who provides augmentation forces or other support to a supported commander or who develops a supporting plan" (JP 1-02), 403. Furthermore, in Korea, the JFLCC is called the "Ground Component Commander" (GCC). The GCC is referred to as the JFLCC in joint publications. The GCC is referred to as the JFLCC for the remainder of this manuscript.

[18] EUCOM calls the forward boundary the "Reconnaissance Interdiction Phase Line" (RIDL) (Allied Air Forces Central Europe, AAFCE Manual 80-2, n.p.: 1986). USCENTCOM calls it the "Long-Range Interdiction Line" (LRIL) (U.S. Central Command, USCENTCOM REG 525-24, n.p.: 1993).

[19] In Korea, the JFACC is called the "Combined Forces Air Component Commander" (CFACC). The CFACC is referred to as the JFACC in joint publications. The term JFACC is used for the remainder of this manuscript. Additionally, the functions for which the JFACC is the supported commander are normally: counter air, strategic attack, airborne reconnaissance and surveillance, and interdiction operations. U.S. Joint Staff, Joint Pub 3-56.1: Command and Control for Joint Air Operations, (Washington, D.C.: Government Printing Office: 14 November 1994), II-3.

[20] This mission is referred to as "deep supporting fire" in Joint Pub 1-02, 108.

[21] Joint Pub 3-0, III-33/34.

[22] Joint Pub 3-09, III-34.

[23] Joint Pub 3-09, V-5/6.

[24] Joint Pub 3-09, [illegible].

[25] U.S. Joint Staff, Joint Pub 0-2: Unified Action Armed Forces (UNAAF), (Washington, D.C.: Government Printing Office: 24 February 1995), IV-4.

[26] Joint Pub 0-2, IV-5.

[27] Interview with Kevin D. Phillips, former Director of Plans in the Combined Forces Command's Air Component Command: 6 January 1997.

[28] The database available to this researcher at the Naval War College was current through 1994. Some 1995 lessons were available and no 1996 data were incorporated into this database during the research period.

[29] JULLs Number 50950-60911 (12327).

[30] JULLs Number 61327-45802 (10744).

[31] JULLs Number 91246-28033 (11287).

[32] JULLs Number 01757-77662 (02931); This coordination is now mandated by Joint Pub 3-0, III-34.

[33] A coordinating authority is "a commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more Military Departments or two or more forces of the same service" (JP 3-0, GL-5).

[34] Deep Operations Primer - Korea, 2nd edition. (Seoul, South Korea: Combined Forces Command: 27 February 1995), 29.

[35] Interview with Colonel Rusty Findley, former Battle Staff Liaison Element Director for the Combined Forces Command: 7 January 1997.

[36] Milan Vego, "Operational Art" (U.S. Naval War College: Joint Military Operations Department: August 1996).

[37] JULLs Number 13356-80100 (05797).

[38] Joint Pub 0-2, 76.

[39] John W. Bodnar, "The Military Technical Revolution: From Hardware to Information," Naval War College Review, Spring, 1993, 7-21; James R. Fitzsimonds and Jan M. Van Tol, "Revolutions in Military Affairs," Joint Forces Quarterly, Spring, 1994, 24-31.

[40] Milan Vego, "Operational Factors," (U.S. Naval War College: Joint Military Operations Department: September 1996).

[41] In Korea, the Synchronization Cell is composed of US and South Korean field grade officers from each service, SOF, ATO builders, intra-theater airlift specialists, intelligence and communications officers, and others; Deep Operations Primer ; "CINC's Synchronization Cell" Brochure, (n.d. n.p.).

[42] Interview, Findley.

[43] Milan Vego, "Operational Design" (U.S. Naval War College: Joint Military Operations Department: August 1996).

[44] The deep battlespace issue does not lie solely in the domain of the USAF and USA. SOF have critical missions in the deep battlespace that include delaying and disrupting interdiction targets, destroying strategic targets, and gathering critical intelligence for CINC-level areas of interest. These forces also require joint fire support and synchronization of actions to avoid fratricide, achieve unity of effort, and economy of force.

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